Industrial Standardization

and Commercial Standards Monthly

July

How Federal Government Agencies Carry Out Standardization Activities

Part I—See Page 169

1939

Standards—Voluntary Agreements of Industry

THE American Standards Association has been serving as national standardizing agency for the trade associations, technical societies, and governmental groups of this country for twenty years. During this time more than 400 standards have been approved.

Use of these standards is not obligatory. They are developed at the request of industry for industrial use. It is true that provisions of many of them have been written into the laws of the states and of the Federal government; but the standards themselves remain as voluntary, and consequently easily revised, general agreements of industry.

Most of these standards are brought into the American Standards Association as the result of a practical and already widely felt need. Like the common law they are based upon the actual practice of companies, the recommendations of trade associations and technical societies, the needs of user groups. The early stages of most of this work have been completed long before it is brought into the American Standards Association. However, when the work reaches the point where more than one industry is involved, then for the sake of economy and convenience the American Standards Association provides a place and a method by which the many groups can codify their general practice—on sizes, materials, fits, and hundreds of other important technical matters.

Here, a committee representing all the interested groups, in the give and take of round-table discussion, can figure out the best wall thickness for pipe at a given pressure, the most effective and economical guard for a punch press, the lowest priced material that after repeated use proves to do a given job in a thoroughly workmanlike manner.

These standards once set up serve as a guide to the purchaser and save the manufacturer from spending a great deal of time rediscovering what someone else has already learned. New materials may be developed that are tougher, higher pressures may change the need for strength, but at the moment an American Standard, like the common law, represents the group opinion as to what is acceptable.

It takes a long time to standardize on a national scale. Months or years may intervene between the undertaking and the completion of the work. But the most effective standards, whether company, trade association, or national, are the ones evolved in this manner—through the participation of everyone interested.

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U. S. Wood Screw Service Bureau

Company Members—Some 2,000 industrial concerns hold membership either directly or by group arrangement through their respective trade associations.

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ASA

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

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How Federal Government Agencies Carry Out Standardization Activities

by

John H. Courtney

Washington representative,
American Standards Association

Standardization activities of the U. S. Department of Commerce, including the National Bureau of Standards, with its Division of Simplified Practice, Division of Trade Standards, and Division of Codes and Specifications, as well as activities of the Federal Specifications Executive Committee are described in this installment.

An installment about the standards work of other departments of the Federal Government will be published in the August issue

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THROUGH contact in its daily transactions with the term "government standards," or through familiarity with the work of one or more of the Federal agencies, the public has come to have a general understanding that certain activities of the government are concerned with standardization. The nature of these activities, and their relation to industry and commerce, are not in all cases clearly understood, however.

The interest of the government in standardization arises from two sources. As the largest single purchaser in the country, and one of the largest in the world, it is interested in an extraordinarily wide range of specifications for materials, supplies, and equipment of all kinds; and through its great research and service bureaus, its interest extends into the entire field of standardization. In fact, so broad is this interest that it is difficult to call to mind a department or establishment which is not concerned with standardization in some manner, either in the conduct of its own operations, in the public interest, or in cooperation with other standards-making bodies. More than forty branches of the Federal government, for example, are officially represented on ASA technical committees.

Since many or all of these activities are likely to affect industry in one way or another, it is but natural that industry should be keenly interested in what is being done and how it may be affected. This is made apparent to the American Standards Association through numerous inquiries from its members and others concerning the work of the different agencies, what they do in the way of standardization, and how their standards are developed. While it is impossible in a short article to cover the standardization activities of all the various Federal agencies, it is believed that a brief description of certain activities of special interest to industry may be helpful. More detailed information may, of course, be obtained directly from the agency mentioned.

National Bureau of Standards

The National Bureau of Standards occupies a leading position among the Federal agencies engaged in standardization activities. Established by Act of Congress in 1901, the Bureau's primary

functions were those of providing for the development, construction, custody, and maintenance of reference and working standards, and their intercomparison, improvement, and application in science, engineering, industry, and commerce. The primary functions have since been gradually expanded to include work relating to standards of quality, of performance, and of practice. These several functions may be exercised for the National government, State governments, and subject to reasonable fees, the general public.

Although all activities of the Bureau concern some phase of standardization either directly or indirectly, the Bureau has found it convenient for administrative purposes to divide its more important activities into two groups comprising the research and testing divisions, and the commercial standardization group. The first is made up of the nine technical divisions — Electricity; Weights and Measures; Heat and Power; Optics; Chemistry; Mechanics and Sound; Organic and Fibrous Materials; Metallurgy; and Clay and Silicate Products. The second group includes the three divisions of Simplified Practice; Trade Standards; and Codes and Specifications. Seventy specialties are covered by the research and testing divisions and 14 by the commercial standardization group. Of the 858 employees on the Bureau staff, in the District of Columbia, 640 are included in the first group, and 61 in the second.

The National Bureau of Standards Studies the Effect of the Wind

This wind tunnel is used by the Bureau to determine the effect of wind pressure on buildings. Results of the research can be used in preparing standard specifications and methods of test for building materials and construction

Research Used for Standards

The results of the work of the research and testing group find wide application in the standardization field. Its fundamental research provides a basis for the development of uniform standards of measurement, and its testing service provides the means of establishing this uniformity. The comparison of certain standards of industry and science, such as gages, precision weights, time pieces, thermometers, meters, etc., with the Bureau's reference standards furnishes an illustration of the direct application of this work. Research on problems of industry and investigations of the properties of materials of interest not only to the Government but to industry as well also form an important part of the work of this group. In its capacity as a testing agency for the various departments of the government, the Bureau also conducts a great variety of tests to determine whether instruments, equipment, materials, and supplies submitted, comply with purchase specifications.

In addition to the activities outlined above, the Bureau cooperates closely with national organizations engaged in standardization work. Its participation in the work of the American Standards Association, for example, has been especially close and effective. The Bureau is represented officially on over 100 ASA committees and is serving as sole or joint sponsor for 18 ASA projects. As a member of the ASA Board for a number of years, the Director has taken an active part in the affairs of the Association.

A detailed description of the research and testing activities of the Bureau is considerably beyond the scope of the present article[1] and attention will be centered on the less technical activities of the commercial standardization group. Through this group the Bureau cooperates with agencies interested in eliminating excess sizes and varieties of products, in establishing dimensional and quality standards, and in unifying specifications.

Division of Simplified Practice—The division of simplified practice was organized in 1921 as a part of a program designed to reduce avoidable waste in industry. The division, on request,

[1] A paper by the Director of the National Bureau of Standards, summarizing the present status of the fundamental units of measurement will appear in a subsequent issue of INDUSTRIAL STANDARDIZATION.

cooperates with industry in finding a practical limitation or simplification of the numerous varieties of size, type, and immaterial differences in which commodities are manufactured. It brings together all parties interested in a project of this character and coordinates their work in developing a simplified practice recommendation.

Simplified practice is a method of accomplishing such limitation or simplification of variety through voluntary action of industrial or commercial groups. Simplified practice is commercial and selective; its function is to determine which sizes or items of a product are most important, and to concentrate production on them whenever possible. In this respect it differs from standardization which is primarily technical and creative, although the two activities are otherwise closely allied; in fact, simplification may be applied to articles already standardized as to design or size. But to the extent that this process operates to clear the way for more advanced standardization to improve the quality and performance of the retained active items, simplified practice may properly be considered the first step in standardization.

The procedure employed in the development of a simplified practice recommendation, which may be defined as a record of retained stock items after superfluous variety has been eliminated, includes the following steps:

1. A survey by a representative committee of the industry covering sizes, varieties, and types of the article made during each year of a given period, the volume of each item produced annually, the relative importance of the items, the probable future trends, and the items which can be eliminated with varying degrees of advantage.
2. Preparation of a statement consolidating this information.
3. Presentation of the statement to a general conference of all interested groups representing producers, distributors, and consumers.
4. Adoption by the conference, on the basis of the survey findings, of a simplified practice recommendation, usually in the form of a list of sizes or types of the product which appear adequate to meet all normal demands.
5. Appointment, by the general conference, of a standing committee of the industry to maintain the recommendation, through revisions when necessary.
6. Circulation by the division to all concerned of a full report of the conference action for final acceptance of the recommendation.
7. Promulgation of the program by the Department of Commerce, through the National Bureau of Standards, and publication of the recommendation, upon receipt of adequate written support by manufacturers, distributors, and consumers.

The division thereafter cooperates with the standing committee in conducting, from time to time, surveys to determine the degree of aherence, to maintain and extend support of the recommendation, and to secure data for reaffirmation or revision to meet changing industrial conditions.

More than 170 simplified practice recommendations have been developed to date, many of which have undergone one or more revisions. The published results of these simplification programs indicate that cooperative efforts have been effective in obtaining support within industries in reducing unnecessary variety.

The recommendation dealing with loaded paper shot shells is an illustration. Before the establishment of this recommendation in 1925, the existing variety of shot shell loads was in excess of 4,000. The current issue of this recommendation, which has undergone six revisions, retains only 262 loads.

Division of Trade Standards—The demand for extension into the field of specifications of work similar to that in the simplification field, led to the establishment in 1927 of the Commercial Standards Unit of the Bureau. This unit functioned until 1929 when it was reorganized under the broader title of division of trade standards.

The division, on request, cooperates with industrial and commercial groups in the voluntary establishment of standards covering grades, quality, dimensional interchangeability, or other acceptance criteria as a national basis for marketing manufactured commodities.

The procedure for the establishment of a commercial standard requested by an interested group or an industry consists in general of the following steps:

1. A survey of existing specifications, and selection or formulation by the proponent group of a tentatively satisfactory specification.
2. Preliminary conferences of members of the proponent group to consider the specification.
3. Review of the specification by the appropriate technical division of the Bureau, although the finished standard, which is promulgated as "a recorded standard of the industry," need not necessarily represent the opinion of the technical staff.
4. Circulation of the specification to all organizations directly interested, with invitation to attend a general conference or submit comments and criticisms.
5. Consideration, by the general conference, of the specification, and adoption as a recommended commercial standard.
6. Appointment, by the general conference, of a standing committee to maintain the standard, through revision when necessary.
7. Circulation of the recommended standard to each unit of the whole industry including manufacturers, distributors, and organized consumers, with request for written acceptance.
8. Promulgation of the recommended standard by the Department of Commerce, through the National Bureau of Standards, and publication of the commercial standard, upon receipt of acceptances representing 65 per cent of production or consumption by volume, and in the absence of valid active opposition.
9. Upon request by the proponent group, or by action by the general conference, the commercial standard may be submitted to the ASA for approval as an American Standard. Eleven commercial standards have been so approved.

The standing committee, consisting of members

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A label may be attached to a product to show that it meets the requirements of the Commercial Standard mentioned, in this case Commercial Standard CS 31-35

from each division of the industry, (producers, distributors, and consumers), receives suggestions regarding the commercial standard, recommends revisions to keep the standard abreast of current industrial progress, and serves as a representative vertical cross section of the industry in preliminary consideration of revisions. A number of standards have undergone several revisions.

An essential feature of many of the 74 commercial standards issued to date is the quality-guaranteeing label which identifies not only the particular standard involved, but also the agency responsible for issuing the guarantee, and forms an adequate basis for the legal enforcement of the guarantee.

Division of Codes and Specifications—The work of this division, organized in 1927 as the division of specifications, and reorganized in 1934 under its present title, is carried on in five sections.

(1) Safety Codes.
(2) Building Codes.
(3) Building Practices and Specifications.
(4) Producer Contacts and Certification.
(5) Consumer Contacts and Labeling.

Much of the work of the first two sections is done in cooperation with other agencies functioning under the ASA safety code correlating committee and the building code correlating committee. However, these two sections cooperate very closely and directly with tax-supported agencies, Federal, State, and municipal, in solving their safety code and building code problems.

Section 3 conducts its work almost exclusively in cooperation with tax-supported agencies and with the building industry both governmental and private. It has prepared and distributed a series of 60 mimeographed documents entitled, "Technical Information on Building Materials", based on tests and investigations conducted in the laboratories of the National Bureau of Standards and is active in the preparation and distribution of a series of printed documents entitled "Building Materials and Structures" of which 17 pamphlets have thus far been issued.

For the purpose of the present article, chief interest is devoted to the activities of Sections 4 and 5.

One of the chief difficulties standing in the way of a more widespread use by purchasers of many excellent specifications well recognized in industry, has been the inability of many purchasers, particularly those buying in small quantities, to determine whether or not commodities delivered conform to the specifications. An effort to overcome this difficulty led to the development by the division of the so-called Certification Plan.

Briefly, the plan consists in the compilation and distribution by the Bureau of lists of sources of supply of commodities covered by certain selected Federal specifications and commercial standards. These lists are compiled after a canvass of all known manufacturers of the general line of commodities covered by the selected specifications and commercial standards. The lists known as willing-to-certify lists contain the names of firms who have indicated their willingness to certify to purchasers, upon request, at the time of placing the contract, that the material supplied by them on contracts based on the selected specifications and standards does actually comply with the requirements and tests thereof and is so guaranteed by them.

14,000 Firms Certify

Willing-to-certify lists have thus far been prepared for 716 Federal specifications and commercial standards. This total includes nearly all of the commercial standards and over one-half of the total number of Federal specifications. About 25,000 requests for listing in connection with one or more of the Federal specifications and commercial standards have been received from some 14,000 firms. The lists are revised when new specifications are developed and requests for listing are received from additional manufacturers.

Participation by manufacturers in the certification plan is entirely voluntary, and the Bureau's efforts to bring about such participation are limited

to making the initial canvass as complete as possible.

The Bureau assumes no responsibility in connection with the actual certification of conformity of a commodity to a given specification. Certificates are to be issued by the manufacturers to the purchasers who are free to take whatever steps seem desirable to check compliance with the specifications, and who have the usual recourse in case of misrepresentation.

Supplementing the certification plan, the division inaugurated 13 years ago the self-identifying, quality-guaranteeing labeling plan. Its purpose is to pass along to the non-contract or over-the-counter buyers some of the benefits derived by the large-quantity purchasers who make use of nationally recognized specifications under the certification plan.

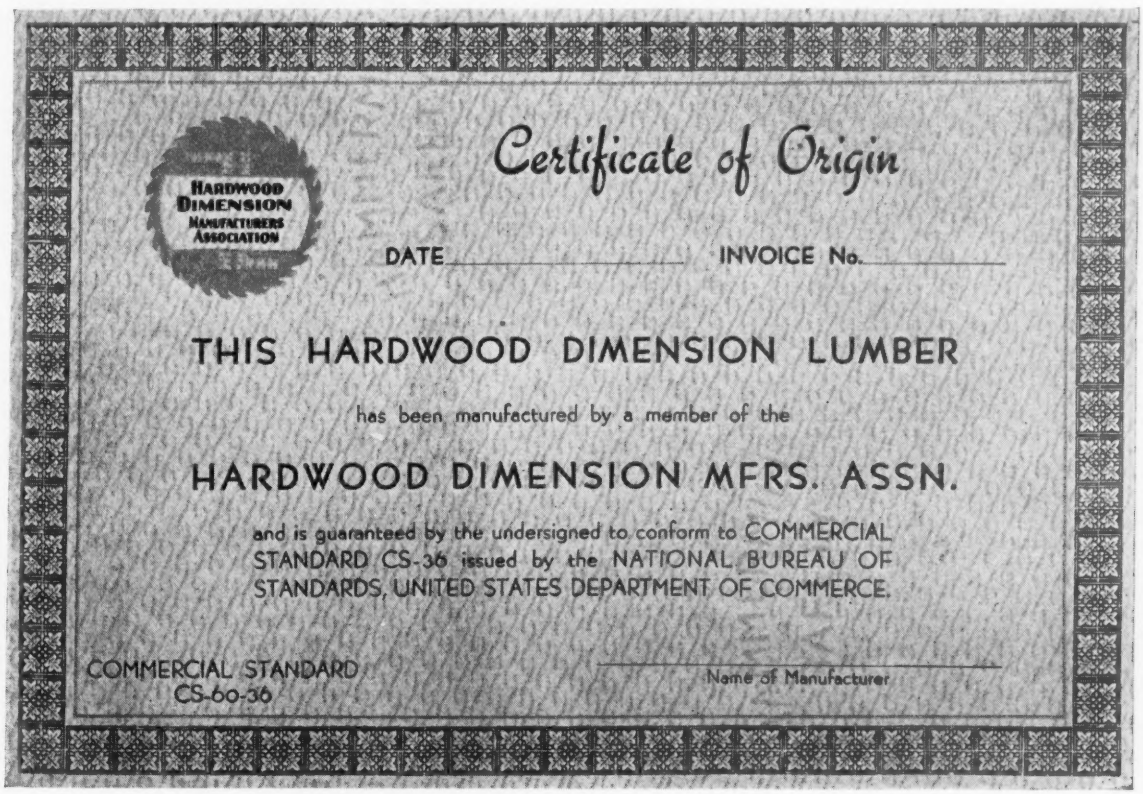
In accordance with this plan, a manufacturer desiring to bring effectively to the attention of the "over-the-counter" buyer, at the time of making a purchase, commodities which he is willing to guarantee as complying with the requirements of certain nationally recognized specifications or standards, places on the individual commodities or their containers, labels which definitely identify both the specification and the manufacturer or the trade association which holds itself responsible for the guarantee.

Certain manufacturers have stated that they are now using or planning to use quality-guaranteeing labels on consumer goods complying with not only commercial standards, but also Federal specifications for brooms, dental alloys, dry cells, fireproof safes, gypsum, library paste, lime, linoleum, lumber, paint, paper, carbon paper, pipe, Portland cement, rope, soap, textiles, wall board, and others.

The labeling plan is also being brought to the attention of consumer organizations and individuals to educate them to look for quality-guarantee labels on commodities, thus affording them an opportunity to make their selections accordingly.

Federal Specifications Executive Committee

Efforts to secure greater coordination and economy in the procurement of supplies purchased under specifications prepared by the various branches of the Government led to the creation in 1921, by executive direction, of the Federal Specifications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Certificate of Origin
DATE
INVOICE No.
THIS HARDWOOD DIMENSION LUMBER
has been manufactured by a member of the
HARDWOOD DIMENSION MFRS. ASSN.
and is guaranteed by the undersigned to conform to COMMERCIAL STANDARD CS-36 issued by the NATIONAL BUREAU OF STANDARDS, UNITED STATES DEPARTMENT OF COMMERCE.
COMMERCIAL STANDARD CS-60-36
Name of Manufacturer

A typical certificate guaranteeing to the purchaser that a manufacturer's product complies with the requirements of a Commercial Standard

Board. This Board functioned until 1935 when it was succeeded by the Federal Specifications Executive Committee, established by order of the President for operation under the Director of Procurement, Treasury Department. To take the place of the former Federal Specifications Board members, the Director of Procurement requested the head of each department and establishment to designate a technical liaison representative with whom the Procurement Division was to collaborate for that department or establishment on technical matters.

The Federal Specifications Executive Committee consists of the Director of the National Bureau of Standards as chairman; the Technical Assistant to the Assistant Director of the Procurement Division, Branch of Supply, as vice-chairman; the Technical Secretary; and the technical liaison representatives from the Navy Department, War Department, the Department of Agriculture, the Post Office Department and the Veterans' Administration.

The duties of the present Executive Committee are the same as those of the former Board; namely, to standardize so far as possible the purchase specifications used by the various agencies of the Government, to bring these specifications into harmony with the best commercial practices, and to develop new specifications as the need arises. Most of the actual preparation of the Federal specifications is done by permanent technical committees composed of qualified representatives from the various branches of the Government. There are about 70 of these committees at present and each deals with a particular group of materials or appliances, such as metals, paints and varnishes, mechanical and electrical appliances, etc.

Federal specifications in general are intended to cover items of a non-military character that are commonly procured by two or more Government departments. The procedure in considering these specifications is as follows:

1. The need for a standard specification for a given item is brought to the attention of the Federal Specifications Executive Committee by one of the technical liaison representatives.
2. Upon favorable consideration the item is referred to the appropriate permanent technical committee, or a new technical committee is organized to deal with the item.
3. The technical committee, after considering existing specifications, formulates a tentative specification which is submitted to interested commercial and industrial concerns for their comment and criticism.
4. The technical committee considers the comment and criticism thus developed and modifies the proposed specification where necessary. It is then submitted to the Federal Specifications Executive Committee for circulation to the respective departments and establishments for their suggestions.
5. These suggestions are referred back to the technical committee for its consideration. The tentative specification is further revised if necessary and is then forwarded to the Federal Specifications Executive Committee with recommendation for its adoption as a Federal Specification.
6. Upon favorable action by the Federal Specifications Executive Committee, the specification is approved and promulgated by the Director of Procurement as a Federal Specification.

Revisions of Federal specifications to keep them abreast of current commercial practice are considered by the appropriate technical committee and recommendations are made to the Executive Committee for consideration and submittal to the Director of Procurement for approval.

Over 1200 Federal specifications covering the more important commodities have been promulgated to date. Their use is mandatory, with certain exceptions, on all departments and independent establishments of the Federal Government.

(Standardization activities of the Navy and War Departments will be presented in our August issue.)

Standards in Emergency

"The Standards Association of Australia, with its extensive organization and its ability to exercise a vast co-ordinating influence in industry, has not been unmindful of the heavy demands likely to be made upon it in time of emergency. It was Lord Stevenson, vice-chairman of the Ministry of Munitions Advisory Committee, who, after the Great War, said: 'If simplification and standardization had not been adopted we would have lost the war.' The British Standards Institution gave invaluable service during the war and has since devoted much of its energy to work on behalf of the defense services.

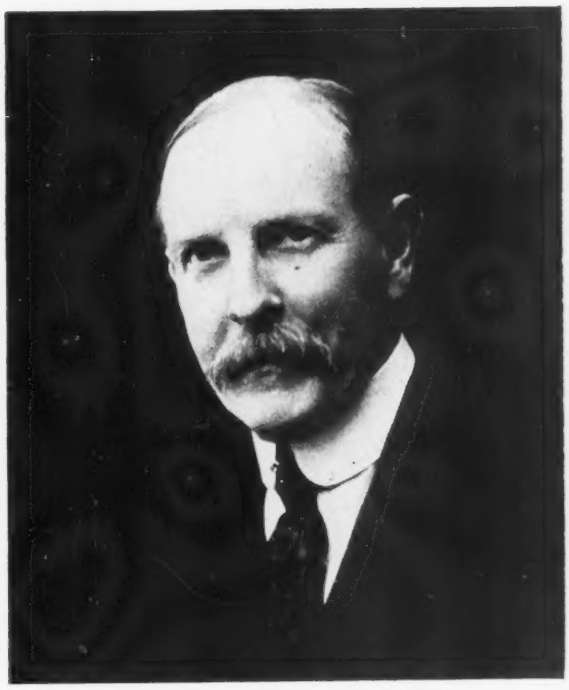
"It therefore appears certain that the wide experience and comprehensive industrial contacts possessed by the Standards Association of Australia and its trained staff of engineers and scientists would be of great value to the Commonwealth and State Governments in emergency, when the resources of departmental staffs and organization would be strained to the utmost.

"The Council of the Association has accordingly offered its services to the Commonwealth Government and is taking steps to prepare itself for a rapid reorganization adapted to work of an emergency character."—*From the SAA Bulletin of the Standards Association of Australia, April, 1939.*

Dr. A. E. Kennelly

THE death on June 18 of Dr. Arthur E. Kennelly, professor-emeritus of electrical engineering at Harvard University and the Massachusetts Institute of Technology, and member of the National Academy of Sciences, is a serious loss to the whole field of electrical engineering. His great abilities, his versatility, and his personal integrity and charm brought him recognition throughout the world as an investigator and as a man.

Dr. Kennelly played an important role in the early development of the science of electricity. His researches in alternating current theory, submarine cables, power transmission, and radio waves—including the explanation of why radio waves bend around the earth's surface instead of going off into space—made him an outstanding figure in science and engineering.



Courtesy American Institute of Electrical Engineers

Helped Organize IEC

In addition to his research work, Dr. Kennelly was active in both national and international standardization activities. He helped to organize the International Electrotechnical Commission and at the time of his death was honorary president of the IEC as well as of its United States National Committee, which is closely associated with the American Standards Association.

For years Dr. Kennelly had carried a heavy assignment as chairman of the ASA Committee on Electrical Definitions. He was also chairman of both the IEC and the ASA committees on Electric and Magnetic Magnitudes and Units. He had been appointed by nine different organizations to represent them on ASA committees.

Dr. Kennelly began his engineering career at the early age of 14, when he acted as assistant secretary of the (British) Society of Telegraph Engineers. He became operator for the Eastern Telegraph Company when he was 15, then assistant electrician, chief electrician for a cable repairing steamer, and senior ship electrician on submarine cables. He came to America and became principal assistant to Thomas A. Edison when he was 26. He was later consulting electrician for the Edison General Electric and the General Electric Companies, and from 1894 to 1901 was a member of the consulting firm of Houston and Kennelly. In 1902 he had charge of the laying of the Vera Cruz-Frontera-Compeche cable for the Mexican government. That same year he was appointed professor of electrical engineering at Harvard University.

One of Dr. Kennelly's chief contributions to applied science is a paper on "Impedance" presented in 1893 before the American Institute of Electrical Engineers, containing the first use of complex numbers as applied to Ohm's Law in alternating-current engineering. In 1902, he expounded his theory concerning the existence of a conducting layer in the atmosphere which makes possible long-distance radio transmission. This theory was later verified experimentally and the so-called ionized layer of reflection, which had been discovered at the same time by the English mathematician, Oliver Heaviside, was named the Kennelly-Heaviside layer.

Received Many Honors

Dr. Kennelly had been president of the American Institute of Electrical Engineers, the Illuminating Engineering Society, and the Institute of Radio Engineers, and had received many honors for his work from universities and learned institutions all over the world. At the time of his death he was the official U. S. Government representative on the International Committee on Weights and Measures, the organization responsible for the work of the International Bureau of Weights and Measures.—P. G. AGNEW.

ASA Authorizes New Project For Documentation Standards

A request from four library associations was considered by the American Standards Association recently resulting in a decision by the ASA to organize a new project, Standardization in the Field of Library Work and Documentation. The American Library Association, the Special Libraries Association, the Medical Library Association, and the American Association of Law Libraries asked the ASA to undertake the work, which will help to bring about uniform methods of listing catalog material and compiling reference data, uniform size and style of library equipment, and standard style for library records and publications.

A uniform method of abbreviation and style of reference in an index or bibliography, for instance, helps in speeding the librarians' work and in making the information more readily available to readers and research workers.

This is only one of the many phases of the work to be undertaken by the committee, the scope of the new project having been approved by the ASA to cover:

"Standards for concepts, definitions, terminology, symbols, practices, methods, supplies, and equipment used in the field of library practice."

A number of subcommittees will probably be organized to take up work on specific subjects such as principles for the style and position of title-page information in periodicals, problems connected with photographic reproduction of documents on paper and on film, general directions for title references to literature, and general agreement on uniform abbreviations and methods of listing foreign-language as well as English publications.

The committee which is now being organized is expected not only to consider national standards for library practice but also will represent American interests in the international standardization work on Documentation, started a few years ago under the procedure of the International Standards Association.

In 1938, when it was invited to take part in this international work, the ASA appointed Miss Caroline F. Ulrich, chief of the periodicals division, New York Public Library, as the American representative on Committee ISA 46 on Documentation, pending the organization of an American committee in this field. Since that time several questions discussed in this international committee have been referred to the four library associations which requested the new ASA project.

All American organizations having a major interest in the new project will be invited to appoint representatives on the committee, and it is hoped that its work may be started in the fall. As soon as the committee has been organized all standardization problems on library work and documentation, both national and international, will be referred to it.

Pyke Johnson Succeeds Reeves As Auto Manufacturers' Head

On June 8, the 25th anniversary of his election, Alfred Reeves resigned as General Manager of the Automobile Manufacturers Association. Pyke Johnson, who for many years has been in charge of the Washington office of the Association, succeeds Mr. Reeves as Vice-President and General Manager. Mr. Reeves will remain on the Board of Directors of the AMA as Advisory Vice-President and will continue to manage the National Automobile Shows.

Mr. Johnson is executive secretary of the Highway Education Board and a former president of the American Trade Association Executives.

The Automobile Manufacturers Association is a Member-Body of the American Standards Association.

Standard Terms for Sheets Ban "Run-of-the-Mill"

"'Run of the mill' is a phrase which should no longer have the run of a department store as the result of a recent decision by sheet manufacturers to adopt standard terms in the sale of sheets and pillowcases.

"Sheets and pillowcases, under the agreement, which fall below first quality after July 1, 1939, will be described as 'irregulars, second quality, second selection, or seconds.' 'Run of the mill' and 'run of the loom' are banned as misleading.

"Identification of second quality sheets will be made either on the sheets themselves or on their labels. The action was announced as the first instance of voluntary labeling standardization yet undertaken by the cotton industry."—*Consumers' Guide, April 15, 1939.*

International Committee Recommends Use Of American Standard for Musical Pitch

A STANDARD musical pitch of 440 cycles per second for the A in the treble clef used in tuning musical instruments will become the world standard if recommendations of an international subcommittee are adopted by the national standardizing bodies. This standard "A" which has already been approved by the American Standards Association was recommended for adoption as an international standard by a subcommittee of the International Standards Association's Committee on Musical Acoustics which met at London May 11 and 12. Representatives of France, Great Britain, Germany, Italy, and the Netherlands attended the meeting of the committee, of which the Deutscher Normenausschuss, the German national standardizing body, holds the secretariat and presidency. The recommendations of the American Standards Association had been forwarded to the committee in writing before the meeting.

The result of the committee's recommendations will be to discard the international agreement of 1885 which fixed the frequency for A in the treble clef at 435 cycles per second. The change was made because the committee agreed that a value appreciably higher than 435 cycles is generally used, frequently varying within fairly wide limits.

Recommend Close Limits

The recommended standard value should be maintained within the closest limits possible by soloists, orchestras, and choirs, throughout all musical performances, and in recorded music, the committee recommended. In view of the fact that it is difficult to maintain an absolutely accurate pitch, especially where there are variations in weather conditions and temperatures, the committee also suggested that technical recommendations be prepared to reduce the necessary tolerances to acceptable values.

The need for a standard pitch was explained by Paul H. Bilhuber, chairman of the ASA Subcommittee on Musical Terminology, and assistant factory manager of Steinway & Sons, piano manufacturers, at the time the ASA approved the 440 cycles per second as an American Standard. He said:

"Confusion more or less dangerous and damaging to musical performance has been the rule in the past rather than the exception.

"Now each manufacturer of a wind instrument can adapt his machines and methods to mechanical standards based upon the musical standard.

"In singing, the adoption of a universal standard is of decisive importance. If the pitch of an orchestra or piano to which a singer is to sing at a concert is different from the pitch of the instrument by which the part or song has been studied, the voice may be strained.

"In the case of the piano, an increase of five cycles per second in the frequency of the standard A, with a corresponding change throughout the entire scale, would throw an additional strain of something like half a ton on the framework of the instrument."

Recognizing that many problems still remain to be solved in order to insure the practical application of the recommended standard concert pitch the international committee has outlined a number of questions which must be studied and solutions reached. These questions are:

What is the practical procedure to be adopted in order to take into account the fact that the frequency of certain orchestral instruments varies only slightly with temperature during a performance, whereas the frequency of other instruments, particularly wind instruments, varies very appreciably?

Would it be advisable to extend the use of a system of broadcasting the standard pitch, thus enabling the performers easily and as frequently as required to receive the standard concert pitch for tuning their instruments, for instance: (*a*). by periodically broadcasting the standard concert pitch; (*b*). by transmitting this standard concert pitch by telephone in a manner similar to that by which the time is given.

What are the types of apparatus, portable or otherwise, both accurate and easy to operate, which can be used in any place at any time to produce the standard concert pitch with sufficient strength; for instance, a tuning fork electrically maintained with amplifier and loudspeaker, etc.?

Would it be advisable that the measuring instruments or secondary standards, such as tuning forks, should be verified by an official Laboratory?

What specification should be drawn up for the manufacture of musical instruments, for instance, tolerance in regard to frequency, temperature for test purposes, etc.? Should consideration be given to a mark of conformity to specifications?

Would it be advisable to organize, both on a national as well as on an international basis, a system for verifying the correct observance of the standard concert pitch of 440 cycles per second?

The international committee will submit its recommendations to the national standardizing bodies affiliated with the ISA and IEC.

City Finds Substantial Savings When Printed Forms are Standard

Reduction in number of forms from 15,000 to 5,000; 360 sizes to 170; and uniform standards of size and quality bring $200,000 savings annually to City of New York

by

Albert Pleydell

Deputy Commissioner, Department of Purchase, City of New York

EARLY in 1934 the function of purchasing printing for all City Departments was transferred by law from the Board of City Record to the Department of Purchase. From the heterogeneous mass of forms used by all agencies that came to the attention of this department, it became evident that a systematic attempt to standardize these forms with respect to size, grade, quality, content, etc., would result in large savings to the taxpayers.

Although it was obvious that a study of the workings of each City Department would be necessary as a preliminary to making changes in many of the forms, the Department of Purchase did not possess power of investigation. Accordingly, a joint committee representing the then Commissioner of Accounts, Department of Finance, and Department of Purchase was organized for the purpose of sponsoring a work relief project to conduct the survey and recommend changes. Professor Coleman L. Maze of New York University was retained as a consultant by the committee through a special appropriation granted the Commissioner of Accounts by the Board of Estimate and Apportionment.

Under the sponsorship of the committee, the former Work Division of the Emergency Relief Bureau established a project for "The Standardization of City Forms and Procedures." For nearly two years, Professor Maze worked in very close association with the project, planning its activities and training its personnel.

The city project continued until the Fall of 1935 when its personnel was transferred to WPA where it has continued until the present time. Due to the technical nature of the work, a long period of training was necessary before the project began to show tangible results. In the first year or so, the savings which might be directly attributed to the work of the project were quite small but in the last two years these savings have increased rapidly.

In general, the activities of the project might be summarized as follows: Members of the staff are assigned to a certain City agency for the purpose of studying the internal organization and procedures of such agency, together with the forms in use. An analysis of the organization and procedures is drawn up in considerable detail and the approval of the particular agency is obtained so that there can be no question as to the accuracy of the report. Based upon this study, recommendations are made for simplifying and consolidating forms. Wherever practicable, the changes in the forms are made within the existing procedure. However, from time to time the project has been able to make acceptable recommendations to the various agencies, which have resulted in radical changes in internal procedure as well as in the simplification of the forms in use.

Every step taken by the project in its work is made in cooperation with designated representatives of the City agencies concerned. Hearings are held at which the sponsoring committee is represented and during which the points of difference between the representatives of the agencies

Lionel Green photo

The complex nature of the administrative work involved in running one of the world's largest cities was reflected in the multiplicity of printed forms used in New York City before a WPA project helped cut down this number and saved the city many thousands of dollars per year

and of the project are resolved. Finally, a report containing the project's recommendations as approved by the interested agencies is made to the joint committee.

During the course of its City-wide survey, the project found approximately 15,000 forms in use in 40 city departments, exclusive of the Department of Education. Its recommendations involved the reduction of this quantity to 5,000, together with a change from 360 sizes to 170 sizes. These suggestions involved a potential saving of $200,000 annually.

A specific recommendation of the project was the elimination of some 370 miscellaneous forms used in common by many departments and the consolidation of these forms into 23 standard City-wide forms. The suggestion was accepted and the standard forms are now carried in the general stores of the Department of Purchase.

At the request of the Department of Education, the project made a preliminary survey of 43 high schools, and the Administrative Division. It found that each school used an average of 95 forms, involving 319 different sizes and 61 different grades of paper. The project has recommended to the Department of Education that these forms, totaling 4,112, be classified into 77 subjects and a new form be adopted for each classification, such new forms to be used by all 43 schools. It was suggested that the 319 sizes be reduced to 60, and the 61 grades of paper be reduced to 28. In the Administrative Division 3,010 forms, involving 215 sizes and 33 grades of paper, were found. It was suggested that the forms be reduced to 276, the sizes to 37, and the grades of paper to 22.

These recommendations were submitted to the officials of the Department of Education where they are now under study and consideration.

The work of the project demands a high degree of technical knowledge of printing and of form-designing, but because it is a work-relief undertaking the staff has been drawn from many fields. During the several years of its existence, it has included accountants, advertising men, architects, bookbinders, etc.

Standardize Letterheads

One of the unusual achievements of the project was the standardizing of letterheads, noteheads, and envelopes used by all City agencies. Due to the personalized character of this type of stationery, it was considered expedient to submit the recommendations of the project to the Board of Estimate with the suggestion that a resolution be

passed making them effective. Accordingly, on March 31, 1938, the following resolution was adopted by the Board of Estimate:

"WHEREAS, At the present time, there are in use throughout the City of New York a wide variety of sizes and grades of letterheads, noteheads, and correspondence envelopes; and

"WHEREAS, Uniform standards of size and quality will result in substantial savings to The City of New York; be it

"RESOLVED, By the Board of Estimate, that the Commissioner of Purchase is hereby authorized and directed to furnish only the sizes and grades of letterheads, noteheads and correspondence envelopes indicated in the following schedule:

LETTERHEADS AND NOTEHEADS

Officials and Grade	*Style of Copy*	*Alternate Sizes*
Members of the Board of Estimate, members of the Council, Corporation Counsel — 50 per cent rag vellum, 28 substance	Engraved	8½x10½, or 5½x8¼, or 8½x5½.
Commissioners, Deputies, Secretaries to Departments, Justices, Judges, Chiefs of Probation Division, County officers, and similar administrative officials — 25 per cent rag bond, 24 substance	Printed	5½x8½, or 8½x5½, or 8½x11.
Divisions and bureaus of departments, branches of courts, traffic courts, deputy County officers and general departmental use—100 per cent No. 1 sulphite bond, 20 substance ...	Printed	5½x8½, or 8½x5½, or 8½x11.

CORRESPONDENCE ENVELOPES

Members of the Board of Estimate, members of the Council, Corporation Counsel — 50 per cent rag vellum, 28 substance	Engraved	No. 6¼, 3½x6; No. 6¾, 3⅝x6½; No. 7, 3¾x6¾; No. 9, 3⅞x8⅞; No. 10, 4⅛x9½; No. 11, 4½x10⅜; No. 12, 4¾x11; No. 14, 5x11½; Baronial, 4½x5¾.
All other officials—No. 1 white wove writing, 28 substance	Printed	Same sizes as above.

—and be it further

"RESOLVED, That the seal of The City of New York be placed on each letterhead or notehead, the seal to be engraved or printed in the same manner as the style of copy above provided. The use of a gold seal is hereby restricted to the letterheads of the members of the Board of Estimate."

At the present time the project is supplementing its detailed investigation of each department with a City-wide study of all types of envelopes including not only those for mailing but also for filing purposes. It is expected that the findings of the project with respect to this one item alone will involve very substantial savings.

It is impossible to evaluate the work of the project in dollars and cents savings because many of the recommendations will take several years before they are given full effect. However, it is safe to say that the recommendations of the project which have already been approved by the various City agencies will involve annual savings for the City in its printing bill of more than $300,000 as against the total cost of the project to date, namely $220,000. Certainly, this is a most substantial investment.

A report on the work of the Project would not be complete without at least a passing reference to some of the men who are so successfully supervising its work. Richard Moodie, project supervisor, and Elmer Moseman, assistant supervisor; together with Edward Madden, Fred Noebel, and Everett Cole are the ones directly charged with the responsibility of carrying out the program. Through the loyal cooperation of their subordinates, the work is progressing rapidly.

British Advance Program For Cinematography Standards

The work of the British Standards Institution's Industry Committee on Cinematography has been extended to cover 35 mm and 8 mm films and reels for these films, as well as the 16 mm film which has already been standardized. The standards of the Society of Motion Picture Engineers of America are being used as the basis for the British committee's work.

The committee is also considering a request for standardization of the 2,000 ft reel, and has circulated a questionnaire to exhibitors to obtain information concerning their practice.

A Glossary of Terms used in the cinematograph industry is now being prepared.

Other work of this committee includes:

Inflammability.—A draft covering a test for inflammability of film has been issued.

Projector Equipment.—The possibility of standardizing the fixing arrangements for attaching sound heads to projector equipment so as to secure interchangeability of sound systems with a minimum of distortion in reproduction is being considered.

Sub-standard Projectors.—Work is under way on a standard test for the performance of projectors from the aspect of light output.

Studio Electrical Equipment.—Work is going forward on standards for electrical equipment used in film studios, including junction boxes, projector lamps, cables, lamp housings, etc.

Safety Code Committee Recommends New Work on Household Ladders

AT its meeting July 7, the Safety Code Correlating Committee of the American Standards Association considered a proposal for the development of a safety code for household ladders. Improper use and inadequate specifications for construction have made ladders one of the important factors in placing the nation's homes at the top of the list in number of accidents during a year, it was explained. The SCCC recommended that the American Standards Association approve the initiation of this project, to cover:

"Rules covering the safe construction and use of household ladders of various types."

If the ASA Standards Council approves this recommendation a committee will be appointed representing the various organizations concerned to develop the proposed safety code.

The SCCC also approved two new revisions of existing standards which will now go to Standards Council for final action. These standards are:

American Recommended Practice Safety in the Construction Industry (Revision of A10-1934)
Regulations for the Installation of Air Conditioning, Warm Air Heating, Air Cooling, and Ventilating Systems (Revision of Z33.2-1938)

Revision of seven standards has been undertaken since the Safety Code Correlating Committee recommended this action, the sponsors for the projects reported at the July 1 meeting. These standards are:

Safety Code for Power Presses, Foot, and Hand Presses (B11-1937)
Safety Code for Woodworking Plants (O1-1930)
Safety Code for Construction, Use, and Care of Ladders (A14-1935)
Textile Safety Code (L1-1929)
American Tentative Standard for Logging and Sawmills (B13-1924)
American Recommended Practice Safety Code for Window Cleaning (A39-1933)
American Recommended Practice Safety Code for Forging and Hot Metal Stamping (B24-1927)

SCCC Elects Officers

At this, its Annual Meeting, the Safety Code Correlating Committee elected officers and named its Executive Committee for the coming year. The committee re-elected its chairman, L. F. Adams of the General Electric Company, who represents the National Electrical Manufacturers Association. A new vice-chairman, W. S. Paine of the Aetna Casualty & Surety Company, representing the National Conservation Bureau, was elected to succeed H. A. Schultz, assistant to the vice-president of the U. S. Steel Corporation, representing the American Iron and Steel Institute. Cyril Ainsworth, assistant secretary of the American Standards Association, continues as secretary.

Two new members were named on the Committee's Executive Committee: W. T. Cameron, safety advisor of the Division of Labor Standards, representing the U. S. Department of Labor; and A. B. Brown, of the Western Electric Company, representing the ASA Telephone Group. These two new members succeed W. S. Paine, manager of the Engineering and Inspection Department, Aetna Casualty and Surety Company, representing the National Conservation Bureau; and V. A. Zimmer, director of the Division of Labor Standards, representing the U. S. Department of Labor.

Other members of the Executive Committee are:

George P. Keogh, New York Department of Labor, representing the International Association of Industrial Accident Boards and Commissions
W. Dean Keefer of the National Safety Council, representing the National Safety Council
C. E. Pettibone, of the American Mutual Liability Insurance Company, representing the National Association of Mutual Casualty Companies

The Safety Code Correlating Committee has general supervision of all the safety code work under the procedure of the American Standards Association. Its final recommendations on safety codes and safety projects are considered and acted upon by the Standards Council of the ASA.

Telephone Employees Receive Award for Work During Hurricane

The cooperative effort of telephone employees who labored day and night to restore telephone service during the hurricane last September brought an award from the Theodore N. Vail Memorial Fund in the form of a bronze plaque to the thousands of telephone employees who had a part in the work of restoration.

National standardization of telephone equipment and services by the American Telephone and Telegraph Company made it possible for men and equipment from as far west as Missouri to come to the help of the North Atlantic States where 600,000 telephones were silenced and $10,000,000 damage inflicted on telephone property.

Standards Important in Recommendations At First Business-Consumer Conference

"THIS week in Buffalo," said *Business Week* in its June 10 issue, "the lion and the lamb lay down together. Some 500 representatives of business and consumer groups met under the auspices of the National Association of Better Business Bureaus. And they ate, drank, and conferred in apparently happy harmony.

"This Business-Consumer Relations Conference was the biggest meeting of its kind ever held. Ten years ago such a get-together would never have been thought of, for there was no discernible necessity for dealing with the consumer point of view as a thing distinguished in any way from the orthodox customer point of view. The organized discontent of some consumers with the things they buy and the way they are sold is just now impressing itself on business as a major marketing problem. And for business and advertising men the significant thing is not what was said in Buffalo this week; simply that there was such a meeting. . . .

"One speaker told business men that 'because you have neglected to enter into this field of consumer education, it has been taken out of your hands by a number of consumer organizations which have grown up in response to a real demand. These organizations can be a menace to you or a help. It depends on your attitude. . . .'

"The biggest cry of the consumers is for more specific facts about merchandise — for simple, standardized labels. A consumer-speaker said that retailers who are at the point of contact are generally anxious to furnish specific information but don't get it from manufacturers. 'It is the manufacturer who by and large conditions the buying public. He is the one who most readily can find the facts regarding his products. He really knows the thread count of his sheets, the quality of his cotton, the amount of silver on his silver plate, the absorption rate of his bath towels, and the rating of his fruits and vegetables. We, however, are expected to be content with appeals to snobbery and other of our weaknesses. There is much evidence that we are not so content, and that if we use good teamwork our situation can be greatly improved.'"

Simplified Practice Recommendation for Coarse Aggregates Revised

The Simplified Practice Recommendation for Coarse Aggregates (crushed stone, gravel and slag) has been revised to eliminate 12 sizes and consolidate the two groups of sizes included in the 1936 edition, according to an announcement by the Division of Simplified Practice, National Bureau of Standards. The two groups of sizes set up in the 1936 edition had the same overall range, but different intermediate size ranges. Each group was intended to be substantially complete and only one was intended to be used in any single marketing area. The Joint Committee of the Mineral Aggregates Associations in submitting this plan recognized the disadvantage of having two groups, but pointed out that when wide acceptance of the recommended sizes had been obtained effort could be made to consolidate the two groups.

Experience gained since 1936 has now made it possible for the Standing Committee in charge of the recommendation to make the desired consolidation of sizes into one group.

The present revision, like the original edition, comprises primary sizes and their combinations or modifications, but closer tolerances have been fixed for the lower limits of each size, a five per cent limit having been placed on a size smaller than the nominal minimum to further control the amount of fine material. One size was added to meet a growing demand for fine seal construction for surface treatment of airports and for other surfaces requiring a fine seal material.

Until printed copies are available, mimeographed copies of this Simplified Practice Recommendation may be obtained without charge from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

Printed Copies Available for Simplified Practice Recommendations

Printed copies of the following Simplified Practices Recommendations are now available, the Division of Simplified Practice of the National Bureau of Standards announces:

Metallic cartridges	R62-39
Paper shipping tags	R93-39

Copies are available from the Superintendent of Documents, Government Printing Office, Washington, D. C., at five cents each.

The Detroit Edison Company Standardizes Its Materials

Representation of all departments and groups in standardization program results in general acceptance of standards agreed upon by standardization committees

Non-standard items are subject to periodic review

by

Arthur J. Beck

Purchasing Department

IN the 20's Detroit was booming and The Detroit Edison Company was hard put to keep ahead of the resulting unpredicted growth in electrical requirements. Power plants and substations were being built, overhead and underground lines extended, sales offices and warehouses constructed, and connections made to customer premises, at such a rate that in ten years the installed capacity was quadrupled over that of 1919. During that decade we installed more than 600,000 kilowatts.

For this expansion we were buying about 65,000 items annually and of necessity directed most of our attention to items of major importance. As a consequence, a number of undesirable conditions affecting the so-called minor items arose.

These minor items were those used in day-to-day operation and construction which everyone had come to take for granted. Among the undesirable conditions were:

1. **Slow movement of stock items due to obsolescence.**
2. **Excessive stocks—both number of stock items and the quantity of each.**
3. **Accumulation of "private" stocks by operating departments because of difficulties in procuring items in small amounts.**
4. **Extra costs in purchasing due to inadequate information on requisitions.**
5. **Excessive number of trade-named items purchased without competition.**
6. **Too great a number of types and sizes of materials and supplies.**
7. **Purchase of large numbers of specially designed items.**

Since these conditions were company-wide in extent, the management decided that a cooperative attack on them by means of a broad standardization program would be desirable. A detailed explanation of the program is given in an article by F. M. Price in the February, March, and April, 1932, issues of the ASA BULLETIN (now INDUSTRIAL STANDARDIZATION.)[1] The fundamentals have not changed and our present practices are essentially the same. I will, therefore, necessarily repeat some of the material given in the earlier article, but will emphasize those parts which have proven most helpful.

Organization and Methods

The first step taken in the Materials Standardization program was the selection of the committee system of operation. This system was selected because it furnishes the whole standardization program with executive backing, and enlists the active and wholehearted support of all departments in the formulation and use of the standards. It also enables committee members to view their problems from a different angle and in cooperation with members in other departments facing the same or similar problems. This committee

[1]Reprints of this article are available from the American Standards Association.

method has the advantage of furnishing a means of cooperation between the using, designing, purchasing, and stores groups, and it also tends to simplify the enforcement problem.

A main standardization committee was appointed to determine the broad policies to be followed and to appoint subcommittees to carry on the actual work. The committee consists of the General Storekeeper, Purchasing Agent, and the Chief Engineer, who acts as chairman. The Chief Engineer and Purchasing Agent are vice-presidents of the Company. This committee agreed that the general aims of standardization are:

1. **Establishment of a classification of all materials and equipment.**
2. **Use of a standard terminology in the description of all materials.**
3. **Establishment of adequate specifications.**
4. **Reduction in the number of different items purchased and used by the elimination of superfluous types and sizes.**
5. **Coordination of decisions with ASA and other national standards.**

To accomplish the first aim, a classification subcommittee was established with personnel drawn from the Stores, Purchasing, Control, and Accounting Departments. They found that if a materials classification were used whenever possible, it would exclude the possibility of repetition or duplication of items in several classes. This is particularly important for stock items and also for the selection of proper materials from the materials catalog. However, since equipment items lend themselves more readily to a use classification, our final arrangement is a compromise between the two systems. It classifies all items of materials and equipment into 65 main classes which are further grouped into 353 subclasses of related items.

Study Possible Savings

It was apparent that some classes offered greater possibilities for economies as a result of standardization than others. To determine which classes should be standardized, a scope subcommittee, made up of the heads of the major operating departments, was established. This committee decided that 38 classes offered sufficient possibilities for savings to justify an intensive study; that 14 classes could be profitably reviewed for terminology and adequate specifications by the Stores and Purchasing Departments; and that the remaining 13 classes did not warrant any review as the items were major equipment which is carefully reviewed by the Engineering, Design, and the using departments at the time of purchase.

To investigate the 38 classes which were to be intensively studied, 18 subcommittees were appointed by the main committee. These consisted of representatives from the Stores, Purchasing, Engineering, and the using departments. In general, the committees were kept small, averaging seven members. However, all interested parties were called upon for advice and suggestions, whether or not their department had a representative on the subcommittee. Thus, all responsible individuals had an active part in the standardization program and, due to their own interest in standardization, they have been more cooperative in following through in the use of standard materials and in reaping the benefits of the program.

The subcommittees were furnished a complete list of items in a given class which had been purchased in a 12-month period. This list, prepared by the Purchasing Department, included the terminology as it appeared on the purchase orders, quantities, users, frequency of purchase, prices, and similar pertinent data. With this information, the subcommittees set about:

1. **Eliminating unnecessary types and sizes, i.e., making one item serve several purposes.**
2. **Eliminating duplication. Several different items may be used for the same purpose by different departments and while good results may be had from any of them, all but one could just as well be eliminated from stock—and, if none were stocked previously, it probably would be desirable to stock the one selected.**
3. **Eliminating obsolete materials and items made to special design by replacing these with national or industry standards.**
4. **Recommending substitutes which make for better construction or lower cost.**
5. **Writing new specifications where necessary.**
6. **Setting up standard terminology for all items which results in considerable difficulty being eliminated in the procurement of material.**

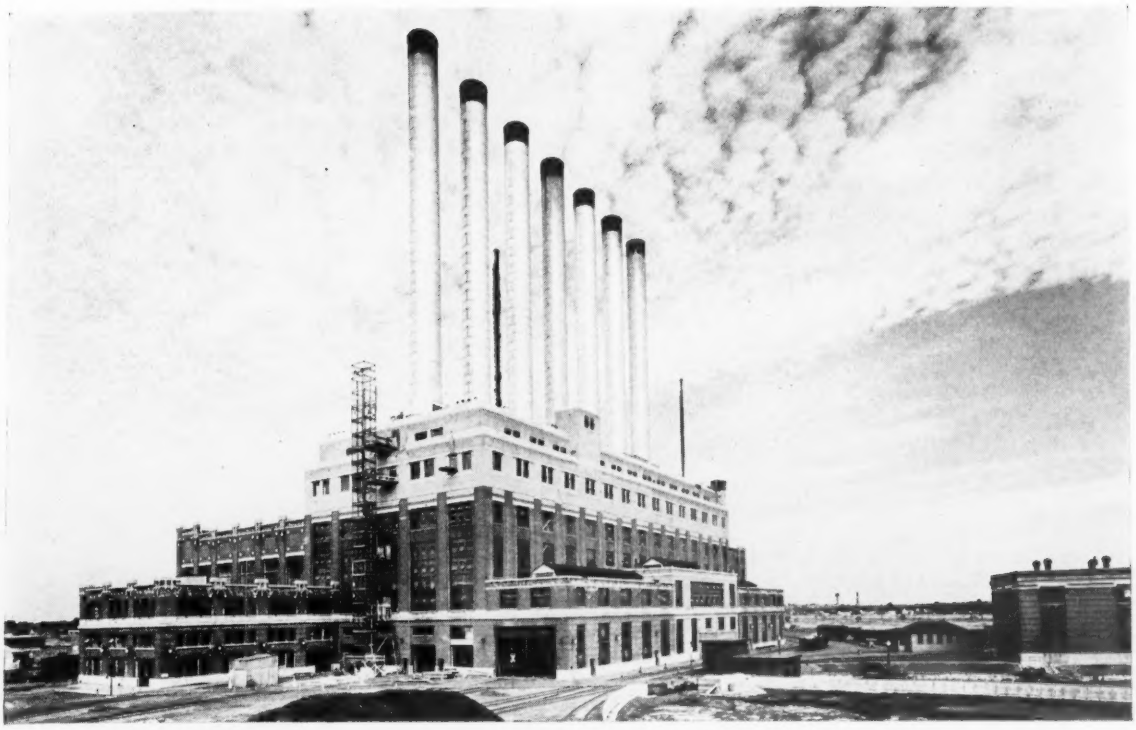
All of these steps were considered in conjunction with existing ASA, national, and manufacturer's standards so as to obtain lower ultimate cost, quicker deliveries, and often a better product.

The results of these studies are made available to all requisitioners by means of a Standards Catalog. It lists both stock and non-stock standard items and useful information regarding them.

Enforcement

Enforcement of standardization has not been a problem with us, primarily because of the cooperative organization of the program. Since every department and group has had a voice in the formulation of the standards they readily accept the standards as their own creation rather than something which is being forced on them.

The actual working out of enforcement rests



As a result of its standards work, the Detroit Edison Company uses aluminum bronzing paste on the stacks of its Conners Creek Power Plant

upon the Purchasing Department. The buyers are governed by these considerations:

Complete elimination of the purchase and use of non-standard items is not desirable but their indiscriminate use should be eliminated.
A requisitioner should not have to wait for committee action before procuring a non-standard item.
New materials and methods should be continually tried so as to keep the Company up to date.

Before purchasing non-standard items, buyers check with the requisitioner those items which, in their opinion, should be questioned. If they are satisfied with the reason for the purchase, it is made. If not, the question is carried to the head of the requisitioning department. Then, if it is desirable to purchase the item, the purchase is made, the proper subcommittee is informed, and it investigates further. Also, the subcommittees periodically review the non-standard purchases, both as a check on the buyer and to review items which perhaps should be made standard.

Revisions

Revisions to the standards are vitally important because standards work is never finished. Of necessity, today's standards are based on present knowledge, materials, and methods. As these change, the standards should also change so that the company can benefit from the new practices. Otherwise, we would soon find ourselves in the position we were in a few years back. As a means of keeping up to date, each subcommittee periodically reviews the purchases of all items classified in the classes assigned to it.

The information furnished the committee is similar to that for the original study, except that it is grouped into non-standard items and standard items not being used. The non-standard items are possible candidates for addition to the standards while the infrequently used standard items are possibilities for elimination. For the period between reviews, an informal routine has been devised for adding to or eliminating an item from the standards. The department wishing to make the change initiates a standards recommendation. This contains a description of the item, its uses, what it replaces, and other pertinent data, and is circulated for approval to every one in the company who might be interested.

We have found that when we have set up standards and made some savings, we are not barred

from reviewing those standards later and improving on them. A number of our current standards are the result of at least four previous changes.

Some Benefits

Now, as to the benefits from standardization. Recently we revised our pipe standards, eliminating certain sizes of lap-welded pipe in favor of resistance-welded pipe. We are now using a better product since a large portion of pipe joints are welded and the resistance-welded pipe is superior for this type of joint due to its more uniform wall, concentricity, and freedom from slag inclusion. Also, we are able to combine requirements and secure carload deliveries instead of making many small purchases, so that we save a minimum of $2,500 per year even though the resistance-welded pipe commands a slight premium.

A subcommittee's recommendation that wool felt be used instead of cork for insulation on air-conditioning water lines has resulted in materials savings of 84 per cent (1,800 on one job) and 50 per cent on the labor cost of installation.

Aluminum bronzing paste has been substituted for powder, resulting in better leafing, a smoother surface, better coverage, and the elimination of powder loss due to blowing away by the wind.

By supplanting a 2½ in. x 4½ in. x 9 in. insulating brick with a 2 in. x 18 in. x 24 in. mineral wool block which is more suitable for boiler and economizer roofs and duct coverings, we not only save 50 per cent on material cost amounting to $2,000 annually and 50 per cent on the labor for laying up the brick but also save on heat losses because the mineral wool has a higher insulating value. Further, due to its low cost we have found a new application for the mineral wool block. It is used as heat insulation on structural steel around high temperature boilers which are installed in plants not originally designed for them.

We replaced a special type of insulation on some of our power and control wires with an insulation which has recently been put on the market. The materials savings on this substitution are running about 50 per cent or $5,000 per year.

Points to be Covered in Ordering Valves

1. Edison Number
2. Quantity
3. Size
4. Type of Valve
5. Body and Bonnet Material
6. American Standard Pressure Rating
7. Length
8. Ends
9. Manufacturer's Figure Number
10. Manufacturer's Drawing Number
11. Seat Material
12. Disc Material
13. Stem Material
14. Maximum Operating Pressure and Temperature
15. Stem Packing
16. Hand Wheel
17. Bonnet Gasket
18. Bonnet Bolting
19. Boss Drilling
20. Chemical Analysis and Physical Properties
21. Detroit Edison Drawing Number
22. Detroit Edison Standard Sheet
23. Detroit Edison Specification
24. Prints for Approval
25. Quotation on which the valves are to be furnished.

Advantages Vital

The advantages which cannot be evaluated in dollars and cents are many, but they are nonetheless vital. In the operation of our drafting and construction bureaus, for example, procurement of materials has been simplified:

> The designer has fewer items to consider, thereby saving considerable time in preparing drawings and bills of material (as an example, wiring supplies were reduced from 2100 items before standardization to 641, resulting in the use of fewer dimensions and more accurate terminology which materially assists in procurement).
>
> The designer can adequately specify what he wants and know that the correct materials will be delivered to the job (some valves require information on 25 different items for complete ordering data and by means of a standard form the designer is assured of covering all *before* the purchase is made).
>
> Delivery time has been materially reduced because more items are now stocked by the Company, the local jobber, or the manufacturer, or they are fabricated from standards parts, as in the case of large valves.

That these departments are sold on standardization and its benefits both to the company and their own operations is shown by the well-worn Standards Catalogs on their desks and their statement that they "wouldn't like to operate without it."

A Useful Tool

In closing, I quote A. C. Marshall, Vice-President and General Manager of our company, "Take advantage of the benefits of standardization where possible, but keep it in its proper place—not making it an end in itself, but a useful tool."

ASA Committee Drafts First Standards To Limit Toxic Dusts and Gases

Allowable limits of carbon monoxide, benzene, hydrogen sulfide, and carbon disulfide, as well as the symptoms to be expected from different types of exposure are defined in new drafts

THE ASA Committee on Allowable Concentrations of Toxic Dusts and Gases met June 30 to consider ways of controlling the amount of dangerous dusts and gases in the air as a protection to the health of workers, and sent to letter ballot of its membership four newly drafted standards outlining allowable concentrations of carbon monoxide, benzene, hydrogen sulfide, and carbon disulfide. Carbon monoxide has long been recognized as an extremely hazardous by-product of many operations and processes connected with everyday life, particularly dangerous because it is difficult to recognize and every human being may be exposed to it for varying periods at some time or other. All the other substances are of great importance to industry and are widely used in a variety of industrial processes.

Approval of these four standards by the committee and by the Standards Council of the American Standards Association will for the first time make available nationally approved and generally accepted standards defining the allowable limits of toxic dusts and gases.

In each case these standards identify the substance covered, and define the concentration permitted in the air during a specified number of hours exposure. As a means of checking the accuracy of the analysis on which the application of the standard is based, instructions are included as to where samples of air are to be taken, and how the analysis shall be made.

Include Medical Data

It is expected that industrial and engineering workers faced with the problem of controlling harmful dusts and gases may not have readily at hand the necessary data for the most effective use of these standards. For this reason all of the new standards include sections in the nature of appendices carrying their instructions into the field of medical knowledge by giving detailed information showing how these harmful materials affect human beings.

The draft standard on carbon monoxide, for instance, states the permissible range of concentrations in the air of work places beyond which presence of the gas becomes a health hazard to the normal individual. The medical information in this draft, as distinct from the engineering information usually included in American Standards, tells how carbon monoxide acts on human beings, how it is absorbed, how those overcome by the effects of the gas can be treated, and gives in some detail the symptoms of acute carbon monoxide poisoning, in mild, severe, and very severe forms. It is expected that this information will help those responsible for protecting the health of workers to recognize the conditions to which this standard applies. A chart shows the relation between exposure to carbon monoxide at various concentrations and the carbon monoxide symptoms which may be expected following exposure for several different time intervals. It is explained, however, that conditions inducing active breathing, such as heat, hard work, or carbon dioxide in the air, would affect the relationships between exposure and the resulting symptoms outlined in the chart. The other three drafts include the same type of information for benzene, hydrogen sulfide, and carbon disulfide.

The ASA committee at its June 30 meeting discussed the possibility of developing standards for silica dusts, for lead in all forms, and for hydrocarbons, as well as taking action on the four new draft standards.

The problems which the committee must face in developing standards in this field are many. It must review the work already carried out by experts in the field and by trade or governmental groups interested in problems of industrial health. Then it must arrange for whatever additional research is necessary in order to set up specific

standards for the minimum quantities of toxic materials in the air which will produce recognizable physiological effects.

These standards when completed will be used by American Standards Association committees working on methods of preventing occupational diseases, particularly by committees on the design and operation of exhaust systems. They will furnish information as to what constitutes injurious exposure, for the use of industry. They will also help insurance companies to advise their policyholders as to what control is needed to adequately protect their workers from disease hazards.

Dr. Roy R. Jones

Dr. Roy R. Jones, Passed Assistant Surgeon, Division of Industrial Hygiene, U. S. Public Health Service, who was active in ASA work as technical secretary of the ASA Committee on Allowable Concentrations of Toxic Dusts and Gases, died June 13 in Salt Lake City, Utah. He had been assisting the State of Utah in preparations for the study of health hazards in the mining and smelter industries. His death followed an operation for acute appendicitis.

Before going to Utah in May, Dr. Jones had been directing a study of compressed-air illnesses among tunnel workers in New York. He also had been assisting State industrial hygiene units in developing and extending their industrial health services, and had been closely associated with most of the major field studies conducted by the Public Health Service's division of industrial hygiene since 1927.

Dr. Jones was especially active in the development of health and safety codes, and in addition to his work with the American Standards Association, he represented the Public Health Service in the work of the National Safety Council, and the Federal Interdepartmental Safety Council. He also served as secretary of the Committee on Medical Control of Silicosis, National Silicosis Conference.

Dr. Jones was largely responsible for the original drafts of the four proposed standards now being considered by the ASA committee on Allowable Concentrations of Toxic Dusts and Gases.

National Conference Agrees On Standard School Buses

Representatives from all of the 48 State Departments of Education and the Indian Service met April 17 with automotive engineers and manufacturers to formulate minimum national standards for school buses. Safety and economy were the most important considerations in the discussions. Important decisions arrived at by the conference called for standardization of body sizes, the use of all-steel construction, use of safety glass, and selection of yellow as the standard school bus color.

"In 1938 there were 86,099 school buses in operation in the country, representing every type of conveyance from an old wooden box wired on to a truck chassis by the local blacksmith to a deluxe streamlined model," says *School Management*, May, which reported the conference.

"For the 4,000,000 school children who are transported daily, these extremes are both undesirable. The makeshift is a hazard to their safety; the expensive model usually means that some other important phase of the school budget is being neglected.

"At the present time, a majority of the states have minimum standards for buses, but the fact that these standards all differ has kept the cost of production high. Under the specifications suggested there will be only six different body sizes."

Economies resulting from volume production of a high-grade bus should have a far-reaching effect on our rural education, according to Dr. Frank W. Cyr and Dr. M. C. S. Noble, Jr., of Teachers College, Columbia University, who for two years have been making a national survey of pupil transportation. "In one state alone," Dr. Cyr reported, "there are 3,000 schools having an attendance of not more than ten pupils, and many schools have less than ten. Good transportation that is within the budget limitations of the rural areas will mean that the schools can be centralized, with immense benefit to the pupils as well as the taxpayer."

Reaffirm Simplified Practice Recommendations

The Division of Simplified Practice, National Bureau of Standards, announces that the following Simplified Practice Recommendations have been reaffirmed without change by the Standing Committees of the respective industries:

Photographic paper R98-36
Full-Disk buffing wheels R115-30
Glass containers for preserves, jellies and apple butter R91-32
Packaging of air brake (electric railway) parts R162-35
Packaging of automotive (bus) engine parts R161-35
Steel barrels and drums R20-28

All of these recommendations are available from the Superintendent of Documents, Government Printing Office, Washington, D. C., at five cents each.

Standardization, a Force In Promoting Safety

Standards have double role in safety—to act as a goal for present progress, and to act as a basis for future advance

National Conservation Bureau cooperates in ASA program, developing national standards to consolidate gains in combatting accidents

by

Julien Harvey

Managing Director, National Conservation Bureau

THE National Conservation Bureau is thoroughly in accord with the principle that standardization makes for efficiency, economy, and orderly progress. It believes, furthermore, that the application of uniform techniques is especially desirable and valuable in the field of accident prevention.

From this principle flows the conviction that, for greatest efficiency, safety work must be cooperative. This means that it must be based upon a common ground of widely accepted standards, for we cannot have teamwork with conflicting rules, or expect to build permanently upon divergent notions of what constitutes desirable methods and practices.

Such standards to my mind act in two principal ways—as powerful incentives to reach the goals they represent, and, once they have been attained, as new points from which to climb higher. That is why the task of developing standards for safety will never end.

As the accident-prevention arm of the Association of Casualty and Surety Executives, the National Conservation Bureau has seen clearly the necessity for evolving national standards as the best means of consolidating the advances made through the years in combatting accidents in industry, in traffic, at home, and elsewhere. Unless we pool and codify our experience and knowledge there is danger—especially in the safety field with its widely diversified areas and its variety of approaches by the engineer, the educator, and the enforcement official—of duplicating effort and losing sight of the aims upon which we should focus.

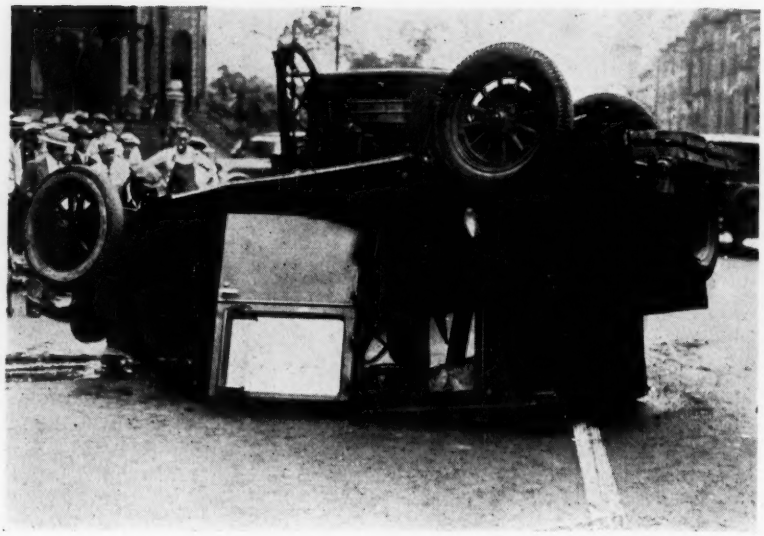
Learn Through Trial and Error

The organized safety movement entered upon its second quarter-century in 1937. Through the initial years we were forced to learn expensively by trial and error, for safety was in its pioneering stage and new trails had to be blazed. It naturally follows as a result of that pioneering that today we know of many tools and techniques which, if consistently applied, virtually guarantee good results.

In the traffic field, for instance, we have learned better how to approach the situation as a result of the sifting-out process of the years. In many cities a program is now being applied which eliminates activities productive of merely sporadic effects and concentrates effort on work of lasting value. We have learned that permanent results can be achieved only through the cumulative endeavors of all the forces in the community following approved procedures.

Such procedures are in a very real sense standards. They are scales of value—yardsticks, if you please—with which we can measure the progress of our efforts. Furthermore, they help us

As one phase of the general program to help reduce the number and severity of automobile accidents, an ASA committee is working on a code for inspection of motor vehicles. The National Conservation Bureau, one of the sponsors, has had a research engineer giving full-time to the project during the last two years



Courtesy Automotive Industries

to direct our work without waste and along progressive lines.

The interest of the National Conservation Bureau in the development of safety standards and codes dates back many years. This is perhaps best evidenced by the fact that since 1922, when the Bureau's parent organization became associated with the American Standards Association's predecessor, it has actively participated in the organized movement to develop and promote national standards. The Bureau is a member-body of the American Standards Association and at the present time is represented on its Board of Directors and on approximately 50 safety code committees.

Help on ASA Committees

Not only staff members of the Conservation Bureau, but engineers representing many of the 60 stock casualty companies which form the Association of Casualty and Surety Executives, serve on these committees developing codes and standards in the industrial and motor vehicle fields.

The elimination of elevator and boiler accidents and of all types of hazards in plants and mines and in the construction industry, and the prevention of occupational diseases, including standards for ventilation and sanitation, comprise just a part of the program in which the National Conservation Bureau is interested. Under direct sponsorship of the Conservation Bureau, safety codes for mechanical power transmission, safety glass, and apparatus for woodworking plants have been approved as American Standards.

Another code, which the Conservation Bureau is sponsoring jointly with the American Association of Motor Vehicle Administrators, covers the inspection of motor vehicles. So keenly interested has the Bureau been in the development of this code that a research engineer attached to our Traffic Division has devoted full time to this project for two years. We believe that this code, now nearing completion, will provide basic rules and methods which will go far toward eliminating the danger in this phase of our street and highway problem.

However, the Bureau's interest and activity in the field of standardization is not confined to the support given to the American Standards Association, but is seen to run through all its varied program of accident-control. It is our constant aim to so direct our program that it will result in the development of procedures, methods, and technical data which will be of value to the entire safety movement.

As a further indication of this, may I call attention to a few of our activities. In the industrial field is our "Handbook of Industrial Safety Standards" published more than twenty years ago and revised from time to time. Prepared by engineers recognized as leaders in their fields, this book has proved highly valuable to bringing about uniformity of operation and efficiency of production.

In the traffic engineering field, the Bureau has developed a number of techniques embodied in a series of publications designed to assist those responsible for reducing motor mishaps and facilitating traffic movement. "Traffic Survey Manual," recently issued, explains in detail how communities may make complete traffic studies and

use the data obtained to improve conditions for both motorist and pedestrian. "Traffic Engineering and the Police," developed in cooperation with the International Association of Chiefs of Police, offers approved methods to be applied by Police in solving traffic difficulties. Again, "Getting Results" describes each month a new traffic problem based on actual accomplishment and shows how communities successfully attack their engineering problems.

Rounding out our program, the Bureau each year lends the services of its staff to a limited number of communities by assisting them in the development of traffic safety plans and suggests ways of making them effective. From work in such "Laboratories" are evolved specific methods and techniques known to produce results. The standards thus developed may be applied by other communities with confidence that the remedies are reliable.

One of the most far-reaching of the Bureau's activities and one destined, we believe, to raise the standards of driving when new generations of motorists take to the road, is the High School Driver Education Program which the Bureau designed several years ago and is now pushing with utmost vigor. Through "Man and the Motor Car," a textbook for traffic education in the High Schools, and through "Driver Training Procedure," which outlines methods of establishing and teaching such courses, the Conservation Bureau contributes to the setting-up of approved standards for the training of new drivers at the beginning of their driving careers.

With a growing list of states now using "Man and the Motor Car" as a regular textbook and over 50,000 copies being studied by youngsters in more than 4,000 high schools, it becomes evident that this program will have a lasting effect in establishing and maintaining higher standards of automobile operation.

Another phase of the Conservation Bureau's program, also leading to standardization, is the Center For Safety Education at New York University established in 1938 through a grant from the Association of Casualty and Surety Executives. Upon completion of a most successful first academic year, the approximately 400 graduates of this teacher training institution will return to their colleges and schools in 20 states and many will put into practice the principles and procedures for safety instruction acquired at the Center. Each year, therefore, a new corps of educators especially trained in safety teaching standards will go out as leaders in accident-prevention instruction to spread their knowledge and methods in all parts of the country.

Still another step looking toward standardization in connection with the Center For Safety Education is the special research committee of well-known educators which, at the present time, is developing a long-range program of research in the field of safety education.

The Bureau is also one of the sponsors of the expanded program of the American Association of Motor Vehicle Administrators designed to bring about greater uniformity in procedure and administrative practice among the states—another step in standardization.

The ultimate value of the Bureau's work as well as that of other organizations in the safety field cannot be predicted, but if we have made progress in conquering the accident disease—and all the statistical evidence indicates that we have —then at least part of the credit must be given to the efforts made in creating standard methods and practices. Whatever helps to build standards helps to bring improvement.

TNEC Hears Recommendations on Standards for Consumer Goods

The Temporary National Economic Committee considered the consumer movement during three days of its sessions early in May. At the conclusion of its consideration of the subject, members of the Committee heard D. E. Montgomery, consumers' counsel of the Agricultural Adjustment Administration under whose guidance the Committee's hearings were held, sum up the results of the inquiry. Mr. Montgomery gave standards an important place in his five recommendations:

1. That standards of consumer goods whereby their quality and usefulness for consumers may be accurately described be made available for use in the sale of such goods.

2. That the sizes of packages in which foods are sold to consumers be standardized to eliminate confusion and deception.

3. That the Committee ascertain and make known to consumers the effects of resale price maintenance legislation upon retail prices and upon other factors involved.

4. That the Committee investigate and make known to consumers the facts concerning the performance of commodity rating agencies, the use of advertising material in the schools, and the purposes, financing and programs of organizations which are, or which purport to be, organizations of consumers.

5. That further consideration be given to the establishment of a central agency of consumer services by the Federal Government.

Federal Specifications Approved For Government Purchasing

The American Standards Association has received the following Federal Specifications which have recently been approved by the Director of Procurement for the use of all departments and establishments of the Government:

Apples; Evaporated (or Dried) Z-A-613a
Bottles and Jugs; Vacuum and Insulated RR-B-596
Brushes; Mucilage and Paste H-B-401
Cambric CCC-C-81
Cement; Portland, Pozzolana SS-C-208
Chairs; Wheel, Invalid AA-C-346a
Chickens; Dressed (Broilers, Fryers, and Roasters) PP-C-251b
Cloth; Tracing CCC-C-531a
Copper; Ingots QQ-C-521a
Cream and Soap; Shaving FFF-C-641
Cushion (Underlay); Carpet and Rug, Sponge-Rubber ZZ-C-811
Drums and Pails; Steel, I.C.C. Type 5E, 5-Gallon, Single-trip container RR-D-761
Duck, Cotton; Fire, Water, and Weather Resistant CCC-D-746
Enamel; Interior, Gloss, Light-Tints and White TT-E 506a
Fish; Fresh PP-F-381a
Handkerchiefs; Cotton, Bandanna DDD-H-74
Honey C-H-571
Hose; Radiator, for Motor Vehicles ZZ-H-511
Insulation (Vegetable or Wood-Fiber); Blanket, Felt, and Loose-Fill HH-I-571
Iron, Wrought (Refined); Bars QQ-I-686a
Lime; Hydraulic, Hydrated SS-L 361
Longcloth; Cotton CCC-L-591
Mineral-Wool, Impregnated; Blanket, Block, and Pipe Covering (Molded), (For Low Temperatures) HH-M-371
Molasses; Sugar-Cane JJJ-M-576
Mopping-Outfits RR-M-571
Paints; Lead-Zinc-Base, Ready-Mixed, and Semi-paste, White and Tinted TT-P-36a
Paper, Bond, White and Colored UU-P-121b
Paper; Kraft, Wrapping UU-P-268a
Paper; Mimeograph UU-P-388a
Pipe-Fittings; Cast-Iron, Drainage WW-P-491
Pots; Solder RR-P-586
Sardines (Domestic); Canned PP-S-51b
Sateen; Cotton CCC-S-91
Scissors and Shears GGG-S-101a
Scribers; Machinists' GGG-S-131a
Sealers; Floor, Wood TT-S-176
Smocks; Dental DDD-S-496
Soap, Soft; for Automobile and General-Cleaning P-S 612
Solvent; Dry-Cleaning P-S-661a
Tile; Floor, Rubber ZZ-T-301
Towels; Linen (for drying glassware) DDD-T-536
Valves, Gate; 125-pound, Threaded and Flanged (for land use) WW-V-76b
Zinc; Plates, Sheets, and Strips QQ-Z-301a

Copies of these Federal Specifications may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5 cents each.

Report Tells How to Prepare Local Building Codes

Information about how to prepare building codes to help local committees and officials charged with the responsibility for such codes has been compiled by George N. Thompson of the National Bureau of Standards, vice-chairman of the ASA Building Code Correlating Committee. One of the first problems of these local committees is to determine what source material is available. This report gives information on useful source material, including that already available as a result of the work of the ASA Building Code Correlating Committee, discusses principles and problems associated with building code requirements, and indicates how to take full advantage of developments in the laboratory and in the field.

In addition to a description of how building code work is done, and what sources of technical information are available, the report describes some of the problems which local committees may meet. It discusses the basic principles; methods of presentation, arrangement, and numbering; the advantages of using national standards and ways of referring to them; methods of recognizing new materials and new methods of construction.

One of the main purposes of the booklet is to help the building code committees to provide adequate protection and at the same time to make it possible to take advantage of up-to-date developments in design and construction to eliminate unnecessary expense.

The report entitled "Preparation and Revision of Building Codes" is one of the series of Building Materials and Structures Reports prepared by the National Bureau of Standards, and is available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., at 15 cents per copy.

Canadians Authorize Work On Stove Pipe Standards

A new standardization project for stove and furnace pipes was authorized recently by the Canadian Engineering Standards Association following a request from the Dominion Fire Commissioner's Office. The request said that these pipes, which are apparently made of a lighter gage metal than they were a few years ago, are responsible for a great number of domestic fires in Canada.

A committee is being organized to undertake the work of preparing a standard.

Canada Authorizes Government To Establish Commodity Standards

Authority to establish quality standards and grades for any commodity and to control all labels, advertising, and marking of packages in the sale of any commodity was given the Trade and Industry Commission of Canada in an amendment to the Dominion Trade and Industry Commission Act May 2. The amendment provides:

"(1) In any case where the Commission, after study and investigation pursuant to the powers contained in this Act, reports and advises in favor of the establishment of commodity standards for any commodity or in favor of the establishment of grades for any commodity or in favor of prescribing the words by which the material content of any commodity shall be represented, the Governor in Council may:—

"(a) prescribe standards of quality for any commodity in accordance with the terms of a report made pursuant to the provisions of this Act and prescribe the manner in which such commodity shall be sold, offered for sale, or displayed for sale, and if such commodity is sold in packages or containers, the size, kind, and marking, branding or labelling of such packages or containers;

"(b) establish grades for any commodity in accordance with the terms of a report made pursuant to this Act and prescribe the manner in which such commodity shall be sold, offered for sale, or displayed for sale, and if such commodity is sold in packages or containers, the size, kind, and marking, branding or labelling of such packages or containers;

"(c) prescribe the words by which the material content of any commodity shall be represented by marking on such commodity or on any package in which such commodity is marketed."

Penalties for offering for sale, or displaying for sale any commodity contrary to the provisions of such an order are set at not exceeding $5,000 in the case of a corporation and in the case of an individual $1,000 and imprisonment not exceeding six months.

Use of Standards Most Important

"The American Standards Association has approved as American Standards two projects of vital interest to this Industry—B16a, Cast-Iron Pipe Flanges and Flanged Fittings, Class 125; and B16e, Steel Pipe Flanges and Flanged Fittings.

"This work began in 1894. It is not finished in 1939. It probably never will be finished. The men who have worked on this task have served the Industry well. They deserve our thanks and on behalf of our members the *Official Bulletin* extends that thanks to the officers and members of the Sectional Committee which has carried on this work. The completion of these two standards, B16a and B16e, and their approval by the American Standards Association as American Standards shows the progress which the committee has made.

"Now the most important phase of the program has been reached, that of putting these two American Standards into practice. Here the member of this National Association can be most helpful by specifying when ordering flanges or flanged fittings that they conform to the *American Standard*."—*Official Bulletin, Heating, Piping and Air Conditioning Contractors National Association.*

Australia Considers Adopting British Paper Size Standard

The British Standard for Paper Sizes adopted by the British Standards Institution in 1937 with the recommendation that it become an Empire Standard has now been adapted by the Standards Association of Australia for use in Australia. The revised standard has been issued as a draft for comment and criticism before being adopted as an Australian Standard.

The standard, which was originally prepared at the request of the Standards Association of Australia and is based on work done by the Federation of Master Printers and Allied Trades of the United Kingdom of Great Britain and Ireland, covers papers used in writing and printing, wrappings and casings, and trimmed boards.

The Australian draft eliminates certain sizes for wrappings and casings which were included in the British Standard but which have been found not to be suitable for use in Australia and inserts in their place a few additional sizes in common use in Australia.

Copies of the Australian draft may be borrowed from the American Standards Association. The latest date for comments and criticism is November 30.

ASTM Issues Volume of Pipe Standards

For many years Committee A-1 on Steel, of the American Society for Testing Materials, has been developing specifications covering steel materials for high-temperature service. As a result of this work, a number of standards have been issued and published as separate pamphlets as well as in the *Book of ASTM Standards*. Recently, a special compilation of 18 specifications covering carbon steel and alloy-steel pipe and tubing, castings, forgings, and bolting has been issued. Several of these standards have been approved by the American Standards Association and a number have been adopted by the Boiler Code Committee of the American Society of Mechanical Engineers. Copies of the publication can be obtained from the ASTM, 260 S. Broad St., Philadelphia, at $1.25 each. The standards included in the new book are:

Pipe and Tubing

Lap-Welded and Seamless Steel Pipe (Am Std B36.3-1936)
Seamless Carbon-Molybdenum Alloy-Steel Pipe
Electric-Fusion-Welded Steel Pipe (Am Std B36.11-1939)
Electric-Resistance-Welded Steel Pipe (Am Std B36.5-1934)
Seamless Alloy-Steel Pipe
Lap-Welded and Seamless Steel and Lap-Welded Iron Boiler Tubes
Seamless Steel Boiler Tubes
Medium-Carbon Seamless Steel Boiler and Superheater Tubes
Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes
Wrought Iron and Wrought Steel Pipe (Am Std B36.10-1935)

Castings

Carbon-Steel Castings for Valves, Flanges and Fittings (Am Std G17.1-1936)
Alloy-Steel Castings for Valves, Flanges and Fittings

Forgings

Forged or Rolled Steel Pipe Flanges for High-Temperature Service (Am Std G17.3-1936)
Forged or Rolled Steel Pipe Flanges for General Service
Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for Service at Temperatures from 750 to 1100 F.

Bolting

Alloy-Steel Bolting Material for High-Temperature Service (Am Std G17.2-1934)
Alloy-Steel Bolting Materials for High-Temperature Service from 750 to 1100 F Metal Temperatures
Carbon and Alloy-Steel Nuts for Bolts

Draft Standards Available From British Association

Drafts of new British Standards received recently and now available from the American Standards Association include:

Specification for Carbon steel castings for ships and marine engine and general engineering purposes (Comments before December 1)
Specifications for Cold-rolled copper sheets and strip (half-hard and annealed) for general purposes (up to and including 3 SWG (0.252 in.) thick and 42 in. wide). To replace British Standard Aircraft Specification 2B.15 (Comments before November 18)
Specifications for Load-bearing concrete, brickwork and masonry (Comments before November 18)
Standard for spraying nozzles for horticultural purposes (Comments before September 23)
Specification for ordinary portland and rapid hardening portland cements (Revision) (Comments before September 30)
Specification for high alumina cement (Comments before September 30)

Only a few copies are available and may be borrowed from the ASA office.

Australian Annual Report Shows 25 New Standards

The most recent annual report of the Standards Association of Australia, just issued, reports 25 new Australian Standards completed and approved during the year ending June 1938, as well as 11 standards revised. This makes a total of 339 approved Australian Standards, made up of 40 tentative standards, 165 technical standards, 54 commercial standards, 15 codes, 14 electrical approval standards, 48 endorsed British Standards, and three endorsed publications of other organizations.

During the year 43 Australian standards were circulated in proof form for public comment and review, and 76 draft British standard specifications were reviewed by the Associations' technical committees and Australian technical interests.

Copies of the report, the Ninth Annual Report for the Year Ended 30th June, 1938, which gives a detailed account of the work of the Standards Association of Australia, are available from the American Standards Association.

ASTM Elects Morgan As New President

H. H. Morgan, manager of the Rail and Track Fastenings Department, Robert W. Hunt Company, and one of the representatives of the ASTM on the Standards Council of the American Standards Association, has been elected president of the ASTM for the coming year. Mr. Morgan is in charge of activities involving inspection work for more than half of the railroads for the United States, including complete inspection of rails for roads representing 65 per cent of track mileage. He is in close contact with the work of the ASA, not only as an ASTM representative on the Standards Council, but also on the Mechanical Standards Committee, and as chairman of the ASA Committee on Standardization of Dimensions and Materials of Wrought-Iron and Wrought Steel Pipe and Tubing.

The new ASTM vice-president, also elected at the Annual Meeting, is G. E. F. Lundell, chief of the Chemistry Division of the National Bureau of Standards. Dr. Lundell is chiefly concerned with the analysis of rocks, ores, ceramics, and metallurgical materials, and is in charge of the preparation and analysis of the Bureau's standard analyzed samples.

Other members of the ASTM Executive Committee are: J. J. Allen, Firestone Tire and Rubber Company; R. D. Bonney, Congoleum-Nairn, Inc.; T. S. Fuller, General Electric Company; J. L. McCloud, Ford Motor Company; M. A. Swayze, Lone Star Cement Corporation.

A Standard of 1215 AD

"There shall be one measure of ale throughout our whole Kingdom and one measure of corn and one breadth of cloth, that is to say, two ells within the selveges; and it be of weights as of measures."—*From Clause XXXV of the Magna Carta, granted by King John of England to his barons, now on exhibition at the New York World's Fair.*

NOTE.—The ell was equal to 45 inches.

ASA Standards Activities

Each month this space will be assigned to the listing of new projects, new standards, drafts of standards submitted to the American Standards Association for approval, or drafts not yet submitted but which are now being considered by ASA committees.

Standards Approved Since Publication of Last List of Standards, February 1

(Where price is not shown, copies of standards were not available at time of publication of this issue. Orders will be received by the ASA and filled when copies become available.)

American Standard Safety Code for Mechanical Refrigeration (Revision of B9-1933) B9-1939 20¢

American Standard Specifications for Welded Wrought-Iron Pipe (Revision of B36.2-1934) B36.2-1939

American Standard Specifications for Electric Fusion-Welded Steel Pipe for High-Temperature Service (B36.11-1939)

American Standard Wrought-Iron and Wrought-Steel Pipe (Revision of B36.10-1935) B36.10-1939 50¢

American Standard Indicating Pressure and Vacuum Gages (B40.1-1939)

American Standard Manufacturing Standards Applying to Broadcast Receivers (Revision of C16d-1932) C16.3-1939

American Standard Vacuum Tube Base and Socket Dimensions (Revision of C16c-1932) C16.2-1939

Standards Now Being Considered by Standards Council for ASA Approval

Manual of Accident Prevention in Construction (Revision of A10-1934)

Malleable-Iron Screwed Fittings, 150 lb (Revision of B16c-1927)

Methods of Test for Insulation Resistance of Electrical Insulating Materials (ASTM D257-38) C59.3

Specifications for Rubber Insulating Tape (ASTM D119-38) C59.6

National Electrical Safety Code (C2-Part 4)

Regulations for the Installation of Air Conditioning, Warm Air Heating, Air Cooling and Ventilating Systems (Revision of Z33.2-1938)

New Projects Authorized

Standardization in the Field of Library Work and Documentation (Z39)

New Projects Requested

Protection of Homes and Small Properties from Fire Hazards

Standardization of Voltages Below 100 Volts

Standardization of Coal Stokers

Standardization of Identification Markings for Compressed Gas Cylinders

Safety Code for Household Ladders

Drafts of Proposed Standards Available

National Electrical Code—reports of Article Committees (subcommittees) for consideration at meeting of ASA committee to be held November 20.

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ASA

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